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| 09/977,439 | 10/15/2001 | Shigeyuki Baba | 7217/65921 | 3682 |

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| EXAMINER |
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NGUYEN, PHU K

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| ART UNIT | PAPER NUMBER |
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2671

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,439

Applicant(s)

BABA ET AL.

Examiner

Phu K. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152) _____
- 6) ☐ Other: _____

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over KURAHASHI et al. (6,278,480) in view of ONO (6,233,003).

As per claim 1, Kurahashi teaches the claimed "imaging device for forming a parallax image string" (Kurahashi, column 11, lines 3-7) including a plurality of image data containing parallax information by capturing images of an object, comprising: "a controller for enabling the capture of the images of said object" (Kurahashi, column 22, line 15 to column 24, line 16); and "forming said parallax image string" (Kurahashi, column 24, lines 17-21). Ono teaches that the capturing of the images "while moving a viewing point of said imaging device based on a time spatial parameter indicative of one of time and spatial information that is supplied from outside and is necessary at a time

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of imaging" is well known (Ono, light shutter, position information, ...column 11, line 58 to column 12, line 33). It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the time and spatial information can be used to improve the quality of the parallax images of the object.

Claim 2 adds into claim 1 "a storage device for storing time spatial parameters interconnected via a network, wherein said controller reads out a first time spatial parameter required at the time of imaging from said various time spatial parameters stored in said storage device" which Ono teaches in figure 10. It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the use a storage device to store the time and spatial information helps to improve the quality of the parallax images of the object when the information is displayed.

Claim 3 adds into claim 2 "said controller causes said parallax image string of captured images and said first time spatial parameter corresponding thereto to be supplied to said storage device and stored therein" which Ono teaches in column 12, lines 3-10. It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the use a storage device to store the time and spatial information

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helps to improve the quality of the parallax images of the object when the information is displayed.

Claim 4 adds into claim 3 "said parallax image string and said time spatial parameter stored in said storage device under control of said controller are supplied to a holographic stereogram producing device for producing a holographic stereogram, and are used as a second time spatial parameter required for producing the holographic stereogram" which would have been obvious in Ono's output image because the captured parallax image information can be used to form "a holographic stereogram" for viewing.

Claim 5 adds into claim 1 "said controller reads out a first time spatial parameter required at the time of image capturing from various time spatial parameters recorded in a recording medium loaded in said imaging device" " which Ono teaches in figure 10. It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the use a storage device to store the time and spatial information helps to improve the quality of the parallax images of the object when the information is displayed.

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Claim 6 adds into claim 5 "said controller controls recording of a parallax image string of captured images and the first time spatial parameter corresponding thereto on said recording medium" which Ono teaches in column 12, lines 3-10. It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the use a storage device to store the time and spatial information helps to improve the quality of the parallax images of the object when the information is displayed.

Claim 7 adds into claim 6 "said parallax image string and said first time spatial parameter corresponding thereto recorded on said recording medium by said controller are supplied to a holographic stereogram producing device for producing a holographic stereogram so as to be used as a second time spatial parameter required at a time of producing said holographic stereogram" which would have been obvious in Ono's output image because the captured parallax image information can be used to form "a holographic stereogram" for viewing.

Claim 8 adds into claim 1 "said time spatial parameter comprises pieces of information indicating imaging conditions" which Kurahashi teaches in column 22, line 27 to column 24, line 16.

Claim 9 adds into claim 8 "said time spatial parameter comprises an imaging time, an imaging angle, an imaging distance indicative of a positional relation between an image capturing point and the object, and one of a translation motion distance and an imaging pitch" which Kurahashi teaches in column 3, lines 46-67.

Claim 10 adds into claim 1 "said parallax image string comprises one of motion picture image data and a plurality of 2-dimensional still picture image data" which would have been obvious because Kurahashi's parallax information can be represented as the motion picture and the still picture images.

Claims 11-20 claim a method based on the device of claims 1-10; therefore, they are rejected under the same reason.

As per claim 21, Kurahashi teaches the claimed "image producing device for producing a parallax image string including a plurality of computer graphics data containing parallax information" (Kurahashi, column 11, lines 3-7) including a plurality of image data containing parallax information by capturing images of an object, comprising: "a controller for enabling to capture images of an object while moving a viewing point of a virtual imaging device" (Kurahashi, column 22, line 15 to column 24, line 16); and "accordingly to produce said parallax image string" (Kurahashi, column 24, lines 17-21). Ono teaches that the capturing of the images "a time spatial parameter indicative of pieces of time and spatial information, said time spatial parameter being

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read from external and needed at the time of forming an image" is well known (Ono, light shutter, position information, ...column 11, line 58 to column 12, line 33). It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the time and spatial information can be used to improve the quality of the parallax images of the object.

Claim 22 adds into claim 21 "a storage device for storing various time spatial parameters, interconnected therewith via a network, wherein said controller reads out a first time spatial parameter from said various time spatial parameters stored in said storage device, said first time spatial parameter being required at the time of producing an image" which Ono teaches in figure 10. It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the use a storage device to store the time and spatial information helps to improve the quality of the parallax images of the object when the information is displayed.

Claim 23 adds into claim 22 "said controller supplies the parallax image string formed and the first time spatial parameter corresponding thereto to said storage device to be stored therein" which Ono teaches in column 12, lines 3-10. It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the

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use a storage device to store the time and spatial information helps to improve the quality of the parallax images of the object when the information is displayed.

Claim 24 adds into claim 23 "said parallax image string and said first time spatial parameter corresponding thereto, having been supplied and stored in said storage device under control of said controller, are supplied to a holographic stereogram producing device for producing a holographic stereogram in which said first time spatial parameter supplied is used as a second time spatial parameter required at the time of producing said holographic stereogram" which would have been obvious in Ono's output image because the captured parallax image information can be used to form "a holographic stereogram" for viewing.

Claim 25 adds into claim 21 "said controller reads out a first time spatial parameter required at the time of producing the image from said various time spatial parameters stored in a recording medium loaded in said image producing device" " which Ono teaches in figure 10. It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the use a storage device to store the time and spatial information helps to improve the quality of the parallax images of the object when the information is displayed.

Claim 26 adds into claim 25 "said controller controls recording of a parallax image string of captured images and the first time spatial parameter corresponding thereto on said recording medium" which Ono teaches in column 12, lines 3-10. It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the use a storage device to store the time and spatial information helps to improve the quality of the parallax images of the object when the information is displayed.

Claim 27 adds into claim 26 "said parallax image string and said time spatial parameter corresponding thereto recorded on said recording medium in association therebetween are supplied under control of said controller to a holographic stereogram producing device for producing a holographic stereogram in which said first time spatial parameter is used as a second time spatial parameter required at the time of producing said holographic stereogram" which would have been obvious in Ono's output image because the captured parallax image information can be used to form "a holographic stereogram" for viewing.

Claim 28 adds into claim 21 "said time spatial parameter comprises pieces of information indicative of imaging conditions of said virtual imaging device" which Kurahashi teaches in column 22, line 27 to column 24, line 16.

Claim 29 adds into claim 28 "said time spatial parameter comprises an imaging time, an imaging angle, an imaging distance indicative of a positional relation between an image capturing point and the object, and one of a translation motion distance and an imaging pitch" which Kurahashi teaches in column 3, lines 46-67.

Claim 30 adds into claim 21 "said parallax image string comprises one of motion picture image data and a plurality of 2-dimensional still picture image data" which would have been obvious because Kurahashi's parallax information can be represented as the motion picture and the still picture images.

Claims 31-40 claim a method based on the system of claims 21-30; therefore, they are rejected under the same reason.

As per claim 41, Kurahashi teaches the claimed "image producing device for producing another parallax image string by executing a synthesizing processing on a parallax image string" (Kurahashi, column 11, lines 3-7) including a plurality of image data containing parallax information by capturing images of an object, comprising: "a controller for enabling a plurality of different parallax image strings" (Kurahashi, column

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22, line 15 to column 24, line 16); and "outputting said another parallax image string produced by said synthesizing processing in association with said time spatial parameter" (Kurahashi, column 24, lines 17-21). Ono teaches that the capturing of the images "having an identical time spatial parameter indicative of time and spatial information to be addressed to as an object of synthetic operation" is well known (Ono, light shutter, position information, ...column 11, line 58 to column 12, line 33). It would have been obvious to a person of ordinary skill in the art at the time the invention was made, in view of the teaching of Ono, to configure Kurahashi's system as claimed because the time and spatial information can be used to improve the quality of the parallax images of the object.

Claim 42 claims a method based on the device of claim 41, therefore, it is rejected under the same reason.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu K. Nguyen whose telephone number is (703)305 - 9796. The examiner can normally be reached on M-F 8:00-4:30.

The fax phone number for the organization where this application or proceeding is assigned is (703) 308-6606. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

Phu K. Nguyen
November 4, 2003

Phu K. Nguyen
PHU K. NGUYEN
PATENT EXAMINER
GROUP 2400